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Memorandum

Date: October 14, 2016

To: Legislative Budget Board (LBB)

From: Kyle Owen

Subject: Energy Management Master Plan Update

Re: Midwestern State University's Strategic Management Master Plan, 2012-2017,
Originally Submitted November 9, 2012

Midwestern State University (MSU) provided an energy management master plan to the LBB in November 2012 in compliance with Executive Order RP 49. A yearly status report is to be provided so the following updates to items in the master plan are presented regarding changes since the 2012 submission and the 2015 update:

1. Replacement of T12 light fixtures to T8 in McCullough-Trigg dormitory: Funding limitations have slowed the conversion in the residence hall with ~15% of the fixtures converted in 2014 and none in 2015 or 2016.
2. Well water irrigation of athletic fields: In June of 2013, a pumping and a distribution system for well water was installed to irrigate two sand-based football practice fields. In June of 2014, the installation of a reverse osmosis unit was installed as part of this well water system so the water could be used on clay-based competition fields (soccer and softball) as well as for hand watering select vegetation around campus. In May of 2015, a third well pump was installed, connected to the system, and a second storage tank was added. In February through June of 2016, the two natural turf football fields and the softball stadium's field were replaced with artificial turf, partly to reduce well watering needs on these fields. The well water/RO system was relocated so it can be used to water the natural turf soccer stadium's field (previously irrigated only by city water). Two practice soccer fields were replaced on south campus with one artificial turf soccer field.
3. Approximately 80% of the campus faucets had a flow limiting (0.5 GPM) aerator installed on them in 2015 to conserve water; no additional faucets were converted in 2016.

4. Procurement of favorable energy commodity contracts: MSU signed a four year electricity contract in June 2013 securing a low rate for four years. In June 2015 the provider offered a “blend and extend” contract option to further reduce the rate and extend it for five more years. None of our contracts were up for renewal in 2016.
5. Continuous self-commissioning of the newly updated energy management control system: Continue this ongoing effort to maximize efficiency and comfort level.
6. The SECO LoanSTAR Energy Conservation Project discussed in the master plan stated MSU anticipated an additional 2% reduction in energy consumption over each of the next five years. For FY16 compared to FY15, MSU observed a 5.9% increase in electricity usage, a 5.3% reduction in gas usage, and an 8.1% increase in water usage. For FY16 compared to FY12, MSU observed a 3.4% decrease in electricity usage, an 11.2% reduction in gas usage, and a 53.8% reduction in water usage.
7. Installed a new 153k GSF dorm to modern energy efficiency standards using mechanical and plumbing energy savings equipment such as energy recovery ventilators for outside air, high efficiency boilers for heating and hot water, low flow plumbing fixtures, rainwater harvesting, and dual-flush water closets. The electrical energy savings equipment that was installed included LED lighting and a lighting control system with occupancy and daylight sensors.
8. Installed energy efficient lighting on athletic fields replacing all of the old fixtures.
9. Replaced 15 atrium lights in the student center with LED lights.